U.S. Department of the Interior
Bureau of Land Management
White River Field Office
220 E Market St
Meeker, CO 81641

ENVIRONMENTAL ASSESSMENT

NUMBER: DOI-BLM-CO-110-2011-0140-EA

CASEFILE/PROJECT NUMBER: COC75126 (Access Road ROW)
COC-64463 and COC-64455

PROJECT NAME: Two Vecta-White River Dome Wildcat Wells

LEGAL DESCRIPTION: Vecta 1-13-2-98 (COC-64455) T2N, R98W, Sec.13. SESE
Vecta 3-18-2-97 (COC-64463) T2N, R97W, Sec.18, SESW

APPLICANT: Vecta Oil & Gas, LTD.

PURPOSE & NEED FOR THE ACTION:

The purpose of the action is to allow the development of Federal Leases on Bureau of Land Management (BLM) surface through the drilling of the proposed well and associated actions. The need for the action is established by the BLM's responsibility under the authority of the Mineral Leasing Act of 1920 as amended by the Federal Land Policy and Management Act of 1976 (FLPMA) to respond to the request to develop the Federal Leases.

Decision to be Made: The Bureau of Land Management (BLM) will decide whether to issue permits to construct two well pads and to drill, operate, and maintain the two associated wells.

SCOPING, PUBLIC INVOLVEMENT, AND ISSUES:

Scoping: Scoping was the primary mechanism used by the BLM to initially identify issues. Internal scoping was initiated when the project was presented to the White River Field Office (WRFO) interdisciplinary team on 9/13/2011. External scoping was conducted by posting this project on the WRFO's on-line National Environmental Policy Act (NEPA) register on 9/12/2011.

Issues: No issues were identified during public scoping.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:

Background/Introduction:
A Notice of Staking (NOS) was received 1/30/2011 for the subject wells, in addition to a NOS for well number 2-18-2-97 which the operator did not submit an Application for Permit to Drill (APD). Both subject leases were due to expire 3/31/2011, and the White River Field Office (WRFO) granted a suspension to remain in effect "until 60 days after the earliest opportunity afforded Vecta under an approved Application for a Permit to Drill (APD)" for both leases. Onsite inspections were conducted for the three locations on 4/11/2011. APDs for the two subject wells were submitted on 5/10/2011. Additional information requested to make the APDs complete was received 9/1/2011.

The proposed wells are located on private surface owned by Bass Enterprises Production Co. A private surface use agreement has been completed between the landowner and the applicant.

Proposed Action:
Vecta would access the proposed well sites by turning off of Hwy 64 onto BLM Road 1103. Approximately one mile of the access would traverse BLM-administered lands. The entire stretch of BLM Road 1103 leading to the well sites (approximately 11,106 ft) would be widened to have 14-16 ft travel surface and a maximum construction width of 35 ft; maximum disturbance related to upgrading BLM 1103 would be approximately nine acres. The combined travel surface and stormwater design for the interim reclaimed resource road would be approximately 4.8 acres. Road upgrades would be consistent with BLM Road Manual 9113 standards (See the complete Surface Use Plan of Operations (SUPO) on file for specific road design features). The proponent proposes to gravel the entire road surface with less than three inch gravel surfacing material.

Vecta 1-13-2-98 Well pad
No new road construction would occur on BLM-administered lands. Turning right off of BLM Road 1103 onto an existing two-track route, access would continue for approximately 1,600 ft. The 1600 ft two-track would also be widened to have a 14-16 ft travel surface (0.7 acres) and a maximum 35 ft construction width (1.29 acres). Turning right, new construction of approximately 307 ft of newly constructed access road over fee surface would be required to access the proposed well. Running width would be approximately 15 ft and the total construction width not greater than 35 ft. The proposed pad facility is 225 ft x 215 ft, with an approximate total surface disturbance of 2.6 acres (See Table 1). Due to the exploratory nature of the well, the operator would submit a design for production facilities via Sundry Notice once production is established.

Table 1. Surface Disturbance Associated with Vecta 1-13-2-98 Well Development

	ft	acres disturbance
Vecta1-13-2-98	225 x 215	2.60
Unnumbered two-track	1600	1.29
New construction: access	307	0.25
	Total proposed disturbance	4.13

Vecta 3-18-2-97

No new road construction would occur on BLM-administered lands. Road upgrades for the entire access road would be consistent with BLM Road Manual 9113 standards. Construction of approximately 64 ft of access road over fee surface would be required to access the proposed well. Running width would be approximately 15 ft and the total construction width not greater than 35 ft. The proposed pad facility is 225 ft x 215 ft, with an approximate total surface disturbance of 2.6 acres (See Table 2). Due to the exploratory nature of the well, the operator would submit a design for production facilities via Sundry Notice once production is established.

Table 2. Surface Disturbance Associated with Vecta 3-18-2-97 Well Development

	ft	acres disturbance
Vecta 3-18-2-97	225 x 215	2.60
New construction: access road	64	0.05
	Total proposed disturbance	2.65

Design Features:

Approximately 2,000 barrels of fresh water are anticipated for use at each well. For both well locations, water would be transported by truck from the White River where Highway 64 crosses the river (at Sec. 34 T2N R97W), and northwesterly on BLM Road 1103 for approximately two miles.

Drill cuttings would be buried in the reserve pits when dry. Drill fluids would be evaporated and buried. Completion fluids would also be allowed to evaporate. The reserve pit would be netted and fenced. A flare pit for air drilling would be located at a minimum of 100 ft from the wellbore. Produced fluids would be contained in test tanks during completions and testing.

Pipelines and flowlines would be applied for separately upon successful well completion as a producer. Earthwork for interim reclamation would occur within six months of well completion or plugging.

The total disturbed surface disturbance, to include upgrades to BLM Road 1103, the 1600 ft unnumbered two-track, construction of access roads, and construction of the well pads is shown in Table 3.

Table 3. Total Surface Disturbance to Develop the Two Proposed Vecta Wells

	ft	acres disturbance
BLM Road 1103 upgrades	11,106	8.92
Unnumbered two-track	1600	1.29
Vecta1-13-2-98 well pad	225 x 215	2.60
Vecta 1-13-2-98 access road	307	0.25
Vecta 3-18-2-97	225 x 215	2.60
Vecta 3-18-2-97 access road	64	0.05
Unnumbered two-track	1600	1.29
	Total proposed disturbance	16.99

No Action Alternative: The two wells would not be drilled and approximately seven acres of surface disturbance would not occur. Road upgrades would not occur on approximately ten acres of two-track roads.

PLAN CONFORMANCE REVIEW: The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: White River Record of Decision and Approved Resource Management Plan (White River ROD/RMP).

Date Approved: July 1, 1997

Decision Number/Page: Page 2-5

Decision Language: "Make federal oil and gas resources available for leasing and development in a manner that provides reasonable protection for other resource values."

AFFECTED ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

Standards for Public Land Health: In January 1997, the Colorado BLM approved the Standards for Public Land Health. These standards cover upland soils, riparian systems, plant and animal communities, special status species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. Because a standard exists for these five categories, a finding must be made for each of them in an environmental analysis (EA). These findings are located in specific elements listed below.

Cumulative Effects Analysis Assumptions: Cumulative effects are defined in the Council on Environmental Quality (CEQ) regulations (40 CFR 1508.7) as "...the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." Table 4 lists the past, present, and reasonably foreseeable future actions within the area that might be affected by the Proposed Action; for this project the area considered was the Natural Resources Conservation Service (NRCS) 5th Level Watershed. However, the geographic scope used for analysis may vary for each cumulative effects issue and is described in the Affected Environment section for each resource.

Table 4. Past, Present, and Reasonably Foreseeable Actions

Action Description	STATUS		
	Past	Present	Future
Livestock Grazing	X	X	X
Wild Horse Gathers	X	X	X
Recreation	X	X	X
Invasive Weed Inventory and Treatments	X	X	X
Range Improvement Projects : Water Developments Fences & Cattleguards	X	X	X

Action Description	STATUS		
	Past	Present	Future
Wildfire and Emergency Stabilization and Rehabilitation	X	X	X
Wind Energy Met Towers			X
Oil and Gas Development: Well Pads Access Roads Pipelines Gas Plants Facilities	X	X	X
Power Lines	X	X	X
Seismic	X	X	X
Vegetation Treatments	X	X	X

Affected Resources:

The Council of Environmental Quality Regulations state that National Environmental Policy Act (NEPA) documents "must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail" (40 CFR 1500.1(b)). While many issues may arise during scoping, not all of the issues raised warrant analysis in an environmental assessment (EA). Issues will be analyzed if: 1) an analysis of the issue is necessary to make a reasoned choice between alternatives, or 2) if the issue is associated with a significant direct, indirect, or cumulative impact, or where analysis is necessary to determine the significance of the impacts. Table 5 lists the resources considered and the determination as to whether they require additional analysis.

Table 5. Resources and Determination of Need for Further Analysis

Determination[1]	Resource	Rationale for Determination
Physical Resources		
PI	Air Quality	See Discussion Below.
PI	Geology and Minerals	Additional mineral resources exist in the area.
PI	Soil Resources*	See Discussion Below.
PI	Surface and Ground Water Quality*	See Discussion Below.
Biological Resources		
NP	Wetlands and Riparian Zones*	There are no riparian or wetland areas that would be impacted by the Proposed Action. The White River, which is the nearest system that supports riparian vegetation, is located approximately 0.5 miles from the project area.
PI	Vegetation*	See Discussion Below.
PI	Invasive, Non-native Species	See Discussion Below.
PI	Special Status Animal Species*	See Discussion Below.

Determination[1]	Resource	Rationale for Determination
NP	Special Status Plant Species*	There are no special status plant species or associated habitat near the project area; therefore there will be no impacts to special status plant species.
PI	Migratory Birds	See Discussion Below.
NI	Aquatic Wildlife*	Discussion regarding special status aquatic species in Special Status Animal Species section is directly applicable to non-special status species.
PI	Terrestrial Wildlife*	See Discussion Below.
PI	Wild Horses	See Discussion Below.
Heritage Resources and the Human Environment		
NP	Cultural Resources	The proposed well locations and access routes have been inventoried at the Class III (100 percent) pedestrian level with no surface manifestations identified (Davenport 2001 compliance dated 4/21/2011)
PI	Paleontological Resources	See Discussion Below.
NP	Native American Religious Concerns	No Native American Religious concerns are known in the area, and none have been noted by Northern Ute Tribal authorities. Should recommended inventories or future consultations with Tribal authorities reveal the existence of such sensitive properties, appropriate mitigation and/or protection measures may be undertaken
NI	Visual Resources	The well pads are located on private surface. No major visual impacts from the pads, or access road development are expected on surrounding public lands. The project is consistent with VRM Class II and III objectives.
PI	Hazardous or Solid Wastes	There is potential for the accidental release of harmful or hazardous materials that would be stored, used, contained, transported, or produced as a result of the Proposed Action.
NI	Fire Management	Although the proposed action lies within C6 and D5fire management polygon, the sites would require point protection efforts during the management (using AMR) of naturally ignited fires to promote a vegetation mosaic representing a spectrum of successional stages (age classes).
NI	Social and Economic Conditions	There would not be any substantial changes to local social or economic conditions.
NP	Environmental Justice	According to the most recent Census Bureau statistics (2000), there are no minority or low income populations within the WRFO.
Resource Uses		
NP	Forest Management	There would not be any removal of woodlands for this project.
PI	Rangeland Management	See Discussion Below.
NI	Floodplains, Hydrology, and Water Rights	There are no floodplains impacted by this project since both well locations are located on a terrace above the White River floodplain. Hydrology will not likely be impacted with the implementation of BMPs for stormwater and mitigation described in the soils and water quality sections. The operator has estimated the amount of

Determination[1]	Resource	Rationale for Determination
		freshwater that would be used for drilling activities and identified the source of the water will be from the White River at an access point on private lands (T2N R97W Sec. 34), therefore water rights will not be impacted.
PI	Realty Authorizations	See Discussion Below.
NI	Recreation	The well pads would be located on private surface therefore no impact to recreation on public lands is anticipated.
PI	Access and Transportation	See Discussion Below.
NP	Prime and Unique Farmlands	There are no Prime and Unique Farmlands within the project area.
Special Designations		
NP	Areas of Critical Environmental Concern	There are no impacts to ACECs.
NP	Wilderness	There are no WSAs in the project area.
NP	Wild and Scenic Rivers	There are no Wild and Scenic Rivers in the WRFO.
NP	Scenic Byways	There are no Scenic Byways within the project area.

[1] NP = Not present in the area impacted by the Proposed Action or Alternatives. NI = Present, but not affected to a degree that detailed analysis is required. PI = Present with potential for impact analyzed in detail in the EA.
* Public Land Health Standard

AIR QUALITY

Affected Environment: The Proposed Action is an attainment area for national and state air quality standards, based on a review of designated non-attainment areas for criteria pollutants, published by the Environmental Protection Agency (EPA 2011). The Proposed Action is also located more than 10-miles from any special designation airsheds or non-attainment areas. Non-attainment areas are areas designated by U.S. Environmental Protection Agency (EPA) as having air pollution levels that persistently exceed the national ambient air quality (NAAQ) standards. Projects that could impact special designation areas and/or non-attainment areas may require special consideration from the Colorado Department of Public Health and Environment (CDPHE) and the EPA. The closest special designation areas are Dinosaur National Monument which is located northwest of the project area (designated Class II airshed with Prevention of Significant Deterioration (PSD) with thresholds for sulfur oxides and visibility), and the Mount Zirkel and Flat Tops Wilderness Areas located to north and east of the Proposed Action (designated Class I areas). General conformity regulations require that federal activities do not cause or contribute to a new violation of NAAQ standards; that actions do not cause additional or worsen existing violations of the NAAQ standards; and that attainment of these standards is not delayed by federal actions in non-attainment areas.

The Proposed Action is in Rio Blanco County within the Western Counties Monitoring Region of Colorado. The 2010 CDPHE monitoring assessment showed there were 11 particulate monitors in the western Counties region (APCD 2010). This regional assessment did not include two new BLM sponsored air quality monitoring sites established in 2010 located near Rangely

and near Meeker. Local air quality parameters including particulates are being measured at monitoring sites located at Meeker, Rangely, Dinosaur and Ripple Creek Pass near the Flat Tops Wilderness Area. Ozone data have been collected in Meeker and Rangely since 2010 and at Colorado National Monument in Mesa County since 2007. To a limited extent ozone is also measured at Dinosaur National Monument. The closest location for an Interagency Monitoring of Protected Visual Environments (IMPROVE) site is near the Flat Tops Wilderness, northeast of the Project Area. IMPROVE sites measure visibility impairment from air borne particles.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The Proposed Action would result in low and short-term impacts on air quality during construction, drilling, completion and, to a lesser extent, from vehicles and gas processing and compression facilities during the production phase. Increases in the following criteria pollutants would occur due to combustion of fossil fuels during construction activities: carbon monoxide, ozone (secondary pollutant formed photochemically from volatile organic compounds (VOCs) and nitrogen oxides (NOx)), nitrogen dioxide, and sulfur dioxide. Three ozone advisories for Rio Blanco County (CAQCC 2011), based on data collected from the Rangely monitoring site, were issued later in February and in March of 2011. Ozone can cause breathing difficulties and respiratory infections especially in the elderly, the young and those with pre-existing ailments such as asthma.

Additional low, short-term impacts to air quality may occur due to venting or flaring of gas from the wells and VOCs from pits and tanks during completion activities. Venting and/or flaring of natural gas is typically done for short periods of time in order to determine potential production amounts and characterize the quality of the gas. If the exploratory wells are successful, VOCs including hazardous air pollutants (HAPs) commonly associated with oil and gas production (benzene, toluene, ethylbenzene, xylene, and n-hexane) will be released from tanks, separation equipment and due to transportation of natural gas, produced water and condensate by pipeline or trucks. Non-criteria pollutants such as nitric oxide, air toxics (e.g. benzene), and total suspended particulates (NAAQ standards have not been set for non-criteria pollutants) may also experience slight, temporary increases as a result of the Proposed Action.

Soil disturbance resulting from construction, heavy equipment, and drill rigs is expected to cause increases in fugitive dust and inhalable particulate matter, specifically particulate matter (PM) 10 microns (μm) or less in diameter (PM_{10}) and particles 2.5 μm or less in diameter ($PM_{2.5}$). Particulate matter is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. More than 70 percent of PM_{10} (coarse particles) is created from windblown dust and soil from roads, fields and construction sites. A smaller percentage of coarse particles comes from automobile and diesel engine exhaust, soot from wood fires, and sulfates and nitrates from combustion sources such as industrial boilers (CAQCC 2011). Dust production is the most likely during the construction and drilling phases, especially when conditions are dry and/or windy. Fugitive dust emissions would likely cause low, short-term impacts to local air quality, specifically visibility. Particulate matter is the major contributor to reductions in visibility, due to their ability to scatter or absorb light. Particulate matter can also have human health impacts.

Once the wells go into interim reclamation topsoil removed during road construction would be redistributed and stabilized alongside the road and the pads would also be recontoured and stabilized. As vegetation establishes in the reclaimed areas, dust production would occur only when vehicles travel on the access roads to service the wells. The increase in airborne particulate matter from this project is not expected to exceed CAAQ or NAAQ standards on an hourly, 8-hour average or daily basis.

In summary, soil disturbance resulting from construction of pads and roads and drilling is expected to cause increases in fugitive dust and inhalable particulate matter in the project area and immediate vicinity and may contribute to reductions in regional visibility. In addition, increases in the following criteria pollutants: carbon monoxide, VOCs, ozone, nitrogen dioxide, and sulfur dioxide would also occur due to combustion of fossil fuels during exploration and production activities. Non-criteria pollutants such as carbon dioxide, methane and nitrous oxides, air toxics (e.g. benzene), total suspended particulates (TSP), and increased impacts to visibility and atmospheric deposition may also increase as a result of the Proposed Action. Even with these increased pollutants the Proposed Action is unlikely to result in an exceedance of NAAQ and CAAQ standards, and is likely to comply with applicable PSD increments and other significant impact thresholds.

Cumulative Effects: The Proposed Action is in the two-county area (Rio Blanco and Garfield Counties), principal air pollution sources include emissions from motor vehicles, oil and gas development, coal-fired power plants, coal mines, sand and gravel operations, windblown dust, and wildfires and prescribed burns (CAQCC 2010). Facility emissions in the two-county area are dominated by emissions related to oil and gas exploration, processing, or transportation. Due to these emission sources in the Piceance, White River and in the nearby Unita and Yampa River Basins, VOCs, nitrogen oxides, and dust (particulate matter) are likely to increase into the future. However, with the exception of ozone, overall air quality conditions in the White River Basin are likely to continue to be in attainment of NAAQ standards due to effective atmospheric dispersion. Ozone levels may increase in localized area and are influenced by emissions in the White River Basin as well as from the nearby Unita and Yampa River basins. Data collected in Dinosaur, Meeker and Rangely have measured exceedance in standards for 1-hour and 8-hour values for ozone (120 ppb and 75 ppb, respectively). To date, these exceedances have not been persistent enough to result in a violation of NAAQ standards.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: No impacts to air quality would result from the No Action Alternative.

Cumulative Effects: Impacts would be similar to those described for the action alternative.

Mitigation:

1. Vecta Oil and Gas will limit unnecessary emissions from point or nonpoint pollution sources and prevent air quality deterioration from necessary pollution sources in accordance with all applicable state, federal and local air quality law and regulation.

2. Vecta Oil and Gas will treat all access roads with water and/or a chemical dust suppressant during construction and drilling activities so that there is not a visible dust trail behind vehicles. Any technique other than the use of freshwater as a dust suppressant on BLM lands will require prior written approval from BLM.

GEOLOGY AND MINERALS

Affected Environment: Surficial geology of the proposed well locations is quaternary colluvium that overlies the Garden Gulch Member of the Green River Formation. Vecta's targeted production zone is in the Wasatch. Proposed well 3-18-2-98 is located approximately ¼ mile northeast on the down dip side of a northwest-southeast trending fault that bisects the two proposed well locations (Hail 1973). Two drilled and abandoned wells are located within one mile of the locations and the nearest producing Wasatch well is 1.7 miles southeast of 3-18-2-98 (COGCC 2011). The Ant Hill Exploratory Oil and Gas Unit, COC-65320X, is approximately six miles east of the proposed locations. The wells are located on discontinuous leases; COC-64455 consists of six parcels and COC-64463 consists of three parcels. Proposed 3-18-2-298 is on a 270 acre parcel and 1-13-298 on a 567 acre parcel. During drilling potential water and oil and gas resources would be encountered from surface to the targeted zone. Coal along with additional oil and gas resources are located below the Wasatch formation.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: There is potential for water migration between geologic zones encountered during drilling, however, the cementing procedure of the Proposed Action isolates the formations and will prevent the migration of gas, water, and oil between these zones. Development of these wells will deplete the hydrocarbon resources in the targeted formation. Underlying coal, oil and gas resources will not be affected.

Cumulative Effects: It is likely development of the Wasatch would be limited along or near the fault structure. If bottom hole spacing of 40 acres is necessary for the recovery of the natural gas resources in the Wasatch, approximately 25 wells for full development of the structure would be required. Full development of the natural gas resource in the Wasatch would not preclude the future recovery of underlying coal, oil, and gas resources.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: The natural gas resources in the targeted zones would not be developed at this time.

Cumulative Effects: There would be no contribution to effects to geological or mineral resources.

Mitigation: None.

SOIL RESOURCES

Affected Environment: The classifications of soils within 30 meters of the proposed surface disturbance that may be impacted by the Proposed Action are shown in Table 6. There are no fragile soils or lands prone to landslides on Federal lands that will be impacted by this project.

Table 6. Soil Classifications within 30 Meters of the Surface Disturbance and/or the Centerline of Roads.

Soil Classification	Range Site Description	Potentially Impacted Acres
Yamac Loam, 2-15 percent slopes	Rolling Loam	31
Blazon, moist-Rentsac Complex, 6-65 percent slopes	Pinyon-Juniper (PJ) woodland	10
Rentsac-Piceance complex, 2-30 percent slopes	PJ woodland/Rolling Loam	10
Moyerson stony clay loam, 15-65 percent slopes	Clayey Slopes	6
Glendive fine sandy loam	Foothills Swale	4
Moyerson stony clay loam, 15-65 percent slopes	Clayey Slopes	2

Almost half of the soils impacted by the project (49 percent, including the two well pad sites), are Yamac Loam soils with a rolling loam range site. Yamac soils are deep, well drained and are formed in eolian (wind-born) and alluvium deposited material (deposited by flowing water, as in a riverbed, flood plain, or delta). These soils have medium to rapid runoff characteristics and the hazard for water erosion is slight to moderate. The access road climbs a terrace adjacent to the White River where the well pads are located. This section of the access road is through Blazon, moist-Rentsac Complex soils with pinyon and juniper (PJ) trees and is derived from shales therefore these soils have more of a clay content. Runoff on these soils is rapid and the hazard for water erosion is moderate to very high.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The Proposed Action would directly disturb an estimated seven acres for the well pad construction and the entrance roads to the pads from the improved access roads. Additional disturbance would occur that is associated with the road upgrades (The acreage of potentially affected soils is given in Table 6 and could be up to 63 acres). With proper Best Management Practices (BMPs) for stormwater, construction practices, reclamation practices, and mitigation described below, impacts to soils outside the 30 meter buffer around surface disturbance are not expected.

Direct impacts from the construction of the well pad and the access road would include soil compaction, removal of vegetation, exposure of subsoil, mixing of soil horizons, loss of topsoil productivity, and an increase in the susceptibility of soils to wind and water erosion. Compaction due to construction activities would reduce aeration, permeability and water-holding capacities of soils in some locations. Removal of vegetation exposes soils to erosion from rainfall, wind and surface runoff. Exposure of subsoil and mixing of soil horizons can change the physical characteristics of subsoil and may reduce the productivity of these soils into the future.

Loss of topsoil productivity can occur during storage due to nutrient loss through percolation of precipitation through the soils, physical loss, mixing of less productive soil layers during moving, and a loss of structure. An increase in surface runoff and sedimentation could be expected from impacted soils and these soils are likely to be less resilient to erosion from surface runoff after disturbance.

These direct impacts could result in increased indirect impacts to soils off the construction site such as increased runoff and erosion. Implementation of BMPs for stormwater, mitigation and reclamation will reduce impacts from this project and should limit impacts to the disturbed areas. However, there is the potential for intense storm events and BMP failures resulting in erosion off the site. This is most likely to occur on the steep slopes adjacent to the well pad. Monitoring of areas around the pad as required in the mitigation below should identify any failure of BMPs or unanticipated erosion and allow a plan to be developed for addressing them.

Due to the poor soils along BLM road 1103 that climbs the terrace to the south of the White River, the road should be graveled and periodic rock rolling dips should be installed at all drainages along this section of the road. The gravel is specified as 3 inch minus material for the travel surface, but no specifics are given for the amount of material and compaction depth. Inadequate gravel on this access road would likely lead to greater impacts to the road surface and resource impacts in terms of erosion and sedimentation. Mitigation requiring adequate road surfacing for this section of the road should reduce impacts and allow for all-weather access.

There is one steep gully that needs to be crossed at station 101+50 in the design figures as part of the Surface Use Plan of Operations (SUPO). The current grade on the western approach is 17 percent; with fill and some grading on the eastern approach this grade will be reduced to 12 percent on both approaches. Twelve percent is over the maximum grade that is typically designed, but this is a short section of road (500 ft), would primarily be used to access the well pad, would be signed on both sides for 10 miles per hour, and is probably the least impacting design for this drainage crossing.

Indirect impacts from this project could result in contamination of surface and subsurface soils due to unintentional leaks or spills from construction equipment and / or storage tank production equipment; if these spills occurred they would affect the productivity of soils. No secondary containment of future production facilities is indicated.

Cumulative Effects: Well pads in the general area (White River Dome) have been and are likely to continue to be exploratory in nature and would occur at maybe one well pad per square mile. Exploratory wells would include surface disturbance and reclamation of other well pads, pipelines, roads and support facilities. Extensive development of oil and gas in this area has not been proposed at this time. Livestock grazing occurs on public and private lands in the area and may reduce canopy cover and lead to localized erosion in some areas. In general, soil disturbance in the Proposed Action and other activities are likely to reduce soil productivity and may lead to increased erosion and instability of soils in local areas.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: No impacts to soils would occur.

Cumulative Effects: Impacts would be similar to those described for the action alternative.

Mitigation:

1. Due to the nature of the soil conditions on BLM road 1103 the entire travel way for the access roads to each pad will be surfaced with 3 inch minus material as described in the SUPO. This surface material should be composed of road base and/or gravel to a compacted depth of six inches before equipment used for drilling or supporting drilling operations moves on to the project site. The travel surface of the roads shall be maintained on all roads during construction, drilling, completion and production phases such that the gravel functions as an effective as an all-weather surface.

2. In order to protect rangeland health standards for soils, erosion features such as rilling, gullying, piping and mass wasting on the surface disturbance or adjacent to the surface disturbance as a result of this action will be addressed immediately after observation by contacting the Authorized Officer (AO) and by submitting a plan to assure successful soil stabilization with BMPs to address erosion problems.

3. All construction activity shall cease when soils or road surfaces become saturated to a depth of three inches unless approved by the AO.

Finding on the Public Land Health Standard #1 for Upland Soils: This action is unlikely to reduce the productivity of soils on public lands.

SURFACE & GROUND WATER QUALITY

Affected Environment: Surface Water: This project is in the headwaters of Yellow Creek. Table 7 describes water segments that may be impacted by this project.

Table 7. Water Quality Classification Table*

Segment	Segment Name	Use Protected	Protected Beneficial Uses			
			Aquatic Life	Recreation	Agriculture	Water Supply
13a	All tributaries to the White River from the confluence with Piceance Creek to Douglas Creek.	Yes	Warm 2	Not Primary Contact Recreation	Yes	No
12	The mainstem of the White River from Piceance to Douglas Creek	No	Warm 1	Existing Primary Contact Recreation	Yes	Yes

* Colorado Department Of Public Health And Environment, Water Quality Control Commission, Regulation No. 37 Classifications and Numeric Standards For Lower Colorado River Basin, Effective June 30, 2011

Segment 13a describes tributaries to the White River that are protected for warm water aquatic life (Warm 2). The warm designation means the classification standards would be protective of aquatic life normally found in waters where the summer weekly average temperatures frequently exceeds 20 °C. The Warm 2 designation means that it has been determined that these waters are not capable of sustaining a wide variety of warm water biota. Segment 13a is use protected; meaning that an intermediate level of water quality protection applies. The antidegredation review requirements are not applicable for use of protected waters and only the numerical protection specified in each reach would apply. This segment also has standards that are protective of recreation and agriculture, but not water supply. Segment 12, White River, is protected for warm water aquatic life (Warm 1). The Warm 1 designation means that it has been determined that these waters are capable of sustaining a wide variety of warm water biota. These segments are also protected for recreation, agricultural and in the case of the White River, water supply.

Groundwater: Precipitation in this area generally moves from areas of recharge in the headwaters of Yellow Creek and Piceance Creek and on Blair Mountain to surface waters via alluvial aquifers and on the surface during spring melt and rain storms. A substantial portion of annual precipitation from these recharge areas infiltrates to deeper bedrock aquifers that contribute to contact springs. Springs and ground water inputs generally move from bedrock aquifers directly into alluvial aquifers or from contact springs along valley terraces (see Table 8).

Table 8. Summary of Spring Inventory Information.

Spring Number	Spring Name	Discharge (gpm)	Conductivity µS/cm (1983)	Conductivity µS/cm (2011)	Last Inventoried
121-09	Blair Ridge	0.08	2355	-	1983
121-11	Blair Bowl	0.02	3648	3407	2011
121-12	Blair Mountain	0.38	2099	1804	2011
121-13	Blair Slope	-	4917	4000	2011
121-14	North Blair	0.07	7705	3715	2011
121-15	Blair Ditch	0.89	2526	3160	2011
121-16	Blair Well	0.05	-	4000	2011
146-06	Skunk Brush	0.23	4299	3520	2011
146-08	SE Barcus	0	4239	626	2011

The contact springs in Table 5 are all located in tributary channels on the terraces south of the White River. The majority of the springs inventoried were found above shale bedrock outcrops in tributaries with headwaters on Blair Mountain. These springs correspond to outcrops of the Green River formation were they have been bisected by tributaries. The conductivity measurements from these springs shows much higher values than the White River which varies from 350 to 700 µS/cm at the USGS streamflow site on the White River above Crooked Wash. Specific conductivity (µS/cm) is the ability of water to conduct electricity across a known distance and typically has a linear relationship to dissolved solids. Typically dissolved solids are

higher in bedrock aquifers in this area as compared to alluvial aquifers that emanate from surface water with less dissolved solids and surface waters, which is the case with the conductivity values from springs shown in Table 5.

The White River alluvium consists of silty sand and rounded cobbles composed of fragments of rock eroded over time from upstream. The tributary alluvium is typically finer grained material and forms delta fans around major tributaries. The terraces where the wells are located consists of alluvium deposited in geologic time bisected by tributaries that have cut into bedrock where contact springs associated with the Green River formation occur. The White River alluvium is typically less than 0.5 mile wide except in the mouths of the larger tributaries and saturated thickness is about 17 ft below the bed of the White River. The terrace alluvium is much thicker and has been cut into by the current stream channel for the White River. The groundwater in the White River alluvium shows a contribution of minerals from bedrock aquifers in the Green River and Wasatch. This change in groundwater quality do to contributions from bedrock aquifers is indicated by twice the average specific conductance of ground waters samples from the White River Alluvium west of the confluence of Piceance Creek compared to the average conductance east of Piceance Creek (Van Liew and Gesink, 1985).

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: Surface Waters: Clearing, grading, and soil stockpiling activities associated with the Proposed Action would alter overland flow and natural infiltration patterns. Potential direct impacts include surface soil compaction caused by construction equipment and vehicles, removal of vegetation and disturbance of surface soils, which would increase rain-splash erosion and reduce the soil's ability to absorb water and increase the volume and rate of surface runoff, which in turn would increase surface erosion. Steep-sloped hillsides adjacent and along the road route are the most likely area for this surface erosion to occur. Stormwater measures and BMPs that include periodic monitoring of any erosion problems would be essential to avoid erosion and increased sedimentation to surface waters.

Surface runoff associated with storm events may increase sediment loads in surface waters down gradient of disturbed areas. Sediment can be deposited and stored in minor drainages where it would be moved into the White River during heavy convective storms. Surface erosion for this project is most likely to occur during the construction and early production phases of the project and would be mitigated using BMPs for stormwater.

Groundwaters: Potential water bearing zones anticipated to be drilled through are the Parchute member of the Green River formation, the Green River formation, the alluvial aquifer for the White River and the upper portion of the Wasatch that does not have gas; the deepest of these zones is estimated at 751 ft below the surface according to the operator's drilling plan. These zones would be protected by installing a surface casing to a depth of approximately 300 ft and cementing behind this casing to the surface. In addition to this surface casing the production casing will be cemented up to the surface casing to protect the lower portion of the Green River formation and the upper part of the Wasatch. Production intervals will likely be in the Wasatch and cement will be run between the production casing and the annulus to the bottom of the surface casing.

If drilling additives are used during drilling and fluids are lost to groundwater aquifers, aquifers may be contaminated. Using bentonite, freshwater and other additives that cannot contaminate groundwater mitigates the loss of drilling fluids that can be common during drilling since the introduction of these substances would not impact the quality of these groundwater features. The operator's drilling plan indicates that freshwater and bentonite will be used to drill the surface casing. The operator would start using drilling additives described as a PolyGel and low solids non-dispersed (LSND) in the mud program in the drilling plan when the production casing is drilled. According to COGCC requirements, all chemicals (greater than 500 pounds) used during drilling, completion, and work-over operations, including hydraulic fracturing treatments will be disclosed in a chemical disclosure form by well site. Also, chemicals and additives used for hydraulic fracturing will be disclosed on the public COGCC web site set up for this purpose.

Impacts to groundwater resources could occur due to failure of well integrity, failed cement, surface spills, and/or the loss of drilling, completion and hydraulic fracturing fluids into groundwater. Types of chemical additives used in drilling activities may include acids, hydrocarbons, thickening agents, lubricants, and other additives that are operator and location specific. Concentrations of these additives also vary considerably and are not always known since different mixtures can be used for different purposes in gas development and even in the same well bore. Loss of drilling fluids may occur at any time in the drilling process due to changes in porosity or other properties of the rock being drilled through for both the surface casing and the production hole. When this occurs, drilling fluids may be introduced into the surrounding formations which could include freshwater aquifers.

Hydraulic fracturing is designed to change the producing formations' physical properties by increasing the flow of water and gas around the well bore. Hydraulic fracturing may also introduce chemical additives into the producing formations. Chemical additives used in completion activities would mostly be pumped back out before production. Left over fluids will be flowed back to the lined reserve pit and evaporated before the reserve pit is closed. The proposed liner is 12 mil, but a common industry standard is now 24 mil, which reduces the chance of accidental puncture.

Known groundwater bearing zones in the project area would be protected by drilling plan as described. Groundwater resources (including the contact springs, perched aquifers, and groundwater zones described in the Affected Environment) are all in elevations above the surface casing. With proper drilling and completion practices contamination of groundwater resources is unlikely.

Cumulative Effects: Well pads in the general area are likely to occur at about a two to three well pads per square mile and will include surface disturbance and reclamation of other well pads, pipelines, roads and support facilities. Groundwater may be influenced by nacholite mining and oil shale research. Livestock and wildhorse grazing occurs on public and private lands in the area and may reduce canopy cover and lead to localized erosion in some areas. No other impacts other than oil and gas development and grazing are expected in the Yellow watershed. In general, the Proposed Action and other activities could increase sedimentation, but it is unlikely that water quality would be impacted in Yellow Creek.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: Neither ground nor surface water quality would be impacted by the No Action Alternative.

Cumulative Effects: Impacts would be similar to those described for the action alternative, but would not include the impacts from the Proposed Action.

Mitigation:

1. To protect surface waters below the project area, keep road inlet and outlet ditches, sediment retention basins, and culverts free of obstructions, particularly before and during spring run-off and summer convective storms. Provide adequate drainage spacing to avoid accumulation of water in ditches or road surfaces. Install culverts with adequate armoring of inlet and outlet. Patrol areas susceptible to road or watershed damage during periods of high runoff.

2. Locate culverts or drainage dips in such a manner as to avoid discharge onto unstable terrain such as headwalls or slumps. Provide adequate spacing to avoid accumulation of water in ditches or road surfaces. Install culverts with adequate armoring of inlet and outlet. Patrol areas susceptible to road or watershed damage during periods of high runoff.

3. When drilling to set the surface casing, drilling fluid will be composed only of fresh water, bentonite, and/or a benign lost circulation material that does not pose a risk of harm to human health or the environment (e.g., cedar bark, shredded cane stalks, mineral fiber and hair, mica flakes, ground and sized limestone or marble, wood, nut hulls, corncobs, or cotton hulls).

4. Vecta shall line the reserve pit with a minimum of 24 mil liner to protect shallow groundwater and the White River aquifer. If groundwater is encountered during pit construction activity, pit construction shall cease and the location shall be reclaimed. An alternate location or an alternate plan (e.g., disposing of pit contents offsite or use of a closed loop and/or semi-closed loop system) must be approved by the AO before resuming operations.

5. Vecta shall monitor pits monthly when containing liquid to identify potential leaks. Pits shall be constructed, monitored, and operated to provide for a minimum of two ft of freeboard at all times and maintain fluids in pits. If the operator believes one of the pits has leaked the AO should be notified immediately and all liquids should be removed and properly disposed of off-site. Vecta will remove all oil from of reserve pits within 24 hours and dispose of it in a proper disposal facility.

6. Vecta shall close the reserve pit within 15 months after the well is drilled. The reserve pits will be allowed to dry through natural evaporation for one four season cycle after the well is drilled. If a pit has not dried by the end of this period, all remaining fluids and/or mud must be removed and disposed of in an approved manner. The concentration of hazardous substances in the reserve pit at the time of pit backfilling must not exceed the standards set forth in CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act of 1980).

Finding on the Public Land Health Standard #5 for Water Quality: It is unlikely that construction of the well pad, the access roads and drilling would result in an exceedence of state water quality standards.

VEGETATION

Affected Environment: The proposed well pad and access road are located within a rolling loam ecological site. Vegetation cover within the project area is comprised primarily of Big Sagebrush (*Artemisia tridentata*), bitterbrush (*Purshia tridentate*), saltbush (*Atriplex spp.*), and greasewood (*Sarcobatus vermiculatus*). Understory vegetation consists primarily of perennial grasses including: Indian ricegrass (*Achnatherum hymenoides*), needle and thread (*Stipa comata*), Junegrass (*Koeleria macrantha*), western wheatgrass (*Agropyron smithii*), and sandberg bluegrass (*Poa secunda*).

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The proposed project would disturb approximately 17 acres, of this, approximately 5 acres occur on BLM administered land primarily associated with upgrades to BLM road 1103. The principal impact to vegetation would be complete removal of vegetation for construction of the well pads and access roads, and the earthen disturbance associated with removing vegetation. In terms of plant community composition, structure, and function, the principal impact over the long term would occur if cheatgrass or noxious weeds are allowed to establish and proliferate on the disturbed areas associated with well pad and access road construction. If revegetation is prompt and effective, there likely would be no long term impact to vegetation communities within the project area. The applicant has proposed to use BLM native seed mix #3 for reclamation of the two proposed sites, this seed mix is generally used for reclamation in PJ woodland sites.

Cumulative Effects: The Proposed Action would not add substantially to current or future disturbances within the project area. This project area currently has healthy and diverse plant community composition; therefore the removal of seven acres of vegetation is not expected to have any measurable influence on the overall plant community.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: There would be no action authorized that could influence the upland vegetation on these sites.

Cumulative Effects: There would be no additional contribution to previous, existing, or future disturbances under this alternative.

Mitigation: In addition to the design features submitted by the applicant in the SUPO, the applicant shall use seed that is certified and free of noxious weeds. BLM recommends using seed mix #2 listed below (Table 9), rather than seed mix #3 as proposed in the SUPO.

Table 9. BLM-Recommended Seed Mix

SEED MIX #2			
Cultivar	Species	Scientific Name	Application Rate (lbs PLS/acre)
Arriba	Western Wheatgrass	*Pascopyrum smithii*	4
Rimrock	Indian Ricegrass	*Achnatherum hymenoides*	3.5
Whitmar	Bluebunch Wheatgrass	*Pseudoroegneria spicata ssp. inermis*	4
Lodorm	Green Needlegrass	*Nassella viridula*	2.5
Timp	Northern Sweetvetch	*Hedysarum boreale*	3
	Sulphur Flower	*Eriogonum umbellatum*	1.5
Alternates:*			
Critana	Needle and Thread	*Elymus lanceolatus ssp. lanceolatus*	3
	Scarlet Globemallow	*Sphaeralcea coccinea*	0.5

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Wildlife, Aquatic and Wildlife, Terrestrial)*:* Upland plant communities in the project area currently meet the Standard and are expected to meet the Standard in the future following project implementation and successful reclamation of disturbed areas, as described in the SUPO which has been incorporated in to the Proposed Action of this document.

INVASIVE, NON-NATIVE SPECIES

Affected Environment: The invasive annual cheatgrass (*Bromus tectorum*) is known to occur within the location of disturbance associated with the Proposed Action, primarily in areas of unrevegetated earthen disturbance in association with roads, pipelines, and well locations. Halogeton (*Halogeton glomeratus*) is also known to occur within the area of the proposed action.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The Proposed Action would create about seventeen acres of earthen disturbance; which if not revegetated with desirable species and /or treated with herbicides to eradicate invasive, non-native species, would likely be invaded and dominated by undesirable species, increasing the potential for fire and the consequent further proliferation of cheatgrass. Noxious weeds could also spread from the project sites to surrounding native rangelands resulting in a long term negative impact. The resulting increase of noxious weeds/cheatgrass could perpetuate a downward cycle of environmental degradation that would be largely irreversible. There would be a low likelihood of long term negative impact if the design features submitted by the applicant in the SUPO are followed.

Cumulative Effects: The Proposed Action would contribute to incremental fragmentation of native plant communities, which puts these areas at greater risk for establishment and spread of noxious and invasive weed species. If noxious weeds establish in these plant communities the health of the upland plant communities and the associated ecological function would decline. With timely and successful reclamation the risk of weed establishment and the effects of fragmentation would be minimized.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: There would be no action authorized that would influence the native vegetation of this area.

Cumulative Effects: There would be no additional contribution to previous, existing, or future disturbances under this alternative.

Mitigation: None beyond the design features submitted by the applicant in the SUPO.

SPECIAL STATUS ANIMAL SPECIES

Affected Environment: There are no threatened, endangered or candidate animal species that are known to inhabit or derive important use from the project area. The only listed species that has potential to be directly influenced by the Proposed Action is the Colorado pikeminnow. While the species occurs in the White River below Taylor Draw Dam and Kenney Reservoir, the White River and its 100-year floodplain from Rio Blanco Lake to the Utah state line are designated critical habitat for the pikeminnow. The White River in Colorado does not appear to support spawning activity, young-of-year nurseries, or juvenile concentrations areas for the Colorado pikeminnow. Additionally, while the listed bonytail, humpback chub, and razorback sucker do not occur in the White River, water depletions in the White River adversely affect these species' downstream habitats in the Green River.

BLM Sensitive Species:
Bald eagle:
The White River corridor is the hub for seasonal bald eagle use of the White River valley. Particularly during the late fall and winter months, several dozen bald eagles make regular foraging use of open upland communities along the river and its larger tributaries. These foraging forays from nocturnal roosts along the White River are dispersed and opportunistic. Concentrated diurnal use and nocturnal roosting functions during the winter, and summer use attributable to a number of nest sites situated in river corridor's cottonwood stands, occur approximately 656 ft from the junction of the access road and Hwy 64.

Northern goshawk and BLM sensitive bat species:
It is unlikely the open-canopied, younger-aged PJ woodlands which surround BLM road 1103 would provide suitable nest substrate for woodland raptors, particularly northern goshawk. This species typically prefers to nest in contiguous aspen or mixed coniferous forests. Based on BLM's experience, goshawks nest at low densities throughout the Basin in mature PJ woodlands above 6,500 ft and Douglas-fir and aspen stands. The WRFO has about six recent records of goshawk nesting in the Piceance Basin, the nearest being over 10 miles from the project area. Raptor surveys were conducted in late-April, 2011 (Grasslands Consulting Inc. 2011). No active nests were located. Similarly these younger stature stands typically do not provide suitable roost substrate for BLM sensitive bat species.

Brewer's sparrow:
Brewer's sparrows are common and widely distributed in virtually all big sagebrush, greasewood, saltbush, and mixed brush communities throughout the Resource Area. These birds are typically one of the most common members of these avian communities and breeding

densities generally range between 10-40 pairs per 100 acres. Although most abundant in extensive stands of sagebrush, the birds appear regularly in small (one to two acre) sagebrush parks scattered among area woodlands and it is extremely likely that the sagebrush communities surrounding the project area provide nesting habitat for this species. Typical of most migratory passerines in this area, nesting activities normally take place between mid-May and mid-July.

BLM sensitive aquatic species:
Roundtail chub, flannelmouth sucker, mountain sucker and bluehead sucker are common throughout the White River. Northern leopard frogs are likely associated with the White River's aquatic and riparian community.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects:

Endangered Colorado River fish and BLM sensitive fish/aquatic species:
Cumulative water depletions from the Colorado River Basin are considered likely to jeopardize the continued existence of the Colorado pikeminnow, humpback chub, bonytail, and razorback sucker and result in the destruction or adverse modification of their critical habitat. In 2008, BLM prepared a Programmatic Biological Assessment (PBA) that addressed water depleting activities associated with BLM's fluid minerals program in the Colorado River Basin in Colorado, including water used for well drilling, hydrostatic testing of pipelines, and dust abatement on roads. In response, the U.S. Fish and Wildlife Service (FWS) prepared a Programmatic Biological Opinion (PBO) that addressed water depletions associated with fluid minerals development on BLM lands. The PBO included reasonable and prudent alternatives which allowed BLM to authorize oil and gas wells that result in water depletion while avoiding the likelihood of jeopardy to the endangered fishes and avoiding destruction or adverse modification of their critical habitat. The reasonable and prudent alternative authorized BLM to solicit a one-time contribution to the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (Recovery Program) in an amount based on the average annual acre-ft depleted by fluid minerals activities on BLM lands. This contribution was ultimately provided to the Recovery Program through an oil and natural gas development trade association. Development associated with this project would be entered into the WRFO fluid minerals water depletion log that is submitted to the Colorado State Office at the end of each Fiscal Year. Implementation of State and federally-imposed design measures to control erosion and spills would limit the risk of contaminants migrating off-site and degrading water quality in the White River. Due to the proximity of the project area from the White River (separated by 0.5 miles, with Hwy 64 in between), it is unlikely the Proposed Action would have any measurable sediment contribution the White River which could impact endangered or BLM sensitive aquatic species.

Brewer's sparrow:
The Proposed Action would involve the direct removal of approximately 17 acres of predominately sagebrush habitat which may potentially provide forage, cover and nesting resources for Brewer's sparrow. Following natural succession regimes, these communities would take anywhere from 20-30 years to return to preconstruction conditions. Impacts to this

species would vary depending on construction timeframes and are discussed in detail in the Migratory Bird section.

Bald eagle:
The nearest well pad is located nearly 1.5 miles from a known bald eagle roost location. Development activities are not expected to have any influence on continued use of this site. Similarly, increased traffic levels associated with well development are not anticipated to influence use of the site as birds using this location are likely accustomed to heavy volumes of traffic associated with Highway 64.

Cumulative Effects: The Proposed Action is not anticipated to add substantially to existing or proposed disturbances and would represent an incremental reduction in available sagebrush habitat for local wildlife populations. The removal of roughly seven acres of sagebrush communities is not anticipated to impact special status species or detract from continued use of the area by local wildlife. Prompt and effective interim reclamation would promote a healthier, diverse plant community which may potentially benefit local wildlife populations in the short-term.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: There would be no direct or indirect impacts to special status animal species under the No Action Alternative.

Cumulative Effects: There would be no contribution to previous or existing disturbances that would potentially impact special status animal species or important habitats under the No Action Alternative.

Mitigation: See mitigation in Migratory Bird section.

Finding on the Public Land Health Standard #4 for Special Status Species: The Land Health Standards for special status animal communities are currently being met in the project area. Neither the Proposed nor No Action Alternatives are expected to detract from continued meeting of these standards.

MIGRATORY BIRDS

Affected Environment: The proposed well locations are broadly encompassed by Wyoming big sagebrush communities. Access to the sites is located along an existing gravel road which traverses open-canopied, younger-aged PJ woodlands. These woodland and sagebrush communities provide nesting habitat for a number of bird species during the breeding season (typically mid-May through mid-July).

The BLM lends increased management attention to migratory birds listed by the U.S. Fish and Wildlife Service (FWS) as Birds of Conservation Concern (BCC). These are bird populations that monitoring suggests are undergoing range-wide declining trends and are considered at risk for becoming candidates for listing under the Endangered Species Act if not given due consideration in land use decisions. Pinyon jay and juniper titmouse, BCC associated with PJ

habitats, have potential to occur in the project area but at extremely low densities. BCC associated with sagebrush shrubland habitats is limited to the BLM-sensitive Brewer's sparrow, which is addressed in the Special Status Animal Species section. Discussions below are directly applicable to this species as well.

Although these locations have no open water or wetland areas that support or attract waterfowl use, the development of reserve pits that contain drilling fluids have attracted waterfowl use, at least during the migratory period (i.e., local records: mid-March through late May; mid-October through late November)

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The Proposed Action would remove approximately 17 acres of predominately sagebrush habitat which, under natural succession regimes, would take 20-30 years to return to preconstruction conditions. Nearly nine of these acres would involve communities (both sagebrush and immature pinyon-juniper) adjacent to an existing gravel road. While birds may use these habitats for nesting purposes, it is suspected that nest densities within roughly 100 meters of the road are reduced to a certain degree.

Impacts to migratory birds would vary depending on construction timeframes. Construction during the winter months would effectively avoid any direct impacts to nesting activities. If drilling activities extend into the spring or summer months returning birds would select nest sites in the face of ongoing activities. Should construction activities be initiated during the nesting season (typically mid-May through mid to late-July) there would be greater potential to influence nesting activities/outcomes including bird displacement, nest abandonment and possible nestling mortality. Activities (pad construction, drilling, increased vehicle traffic) which take place during the breeding season may indirectly influence an additional 12 acres of functional forage and nesting habitats due to reductions in nest densities and avoidance of habitats associated with increased human activity, vehicle traffic and construction activities.

It has been brought to BLM's attention that in certain situations migratory waterfowl have contacted drilling or frac fluids (i.e., stored in reserve pits) during or after completion operations and are suffering mortality in violation of the Migratory Bird Treaty Act. The extent and nature of the problem is not well defined, but is being actively investigated by the federal agencies and the companies. Until the vectors of mortality are better understood, management measures must be conservative and relegated to preventing bird contact with frac and drilling fluids that may pose a problem.

Cumulative Effects: The Proposed Action is not anticipated to add substantially to existing or proposed disturbances. Currently, there is limited oil and gas-related disturbance in and around the project area. Although long-term, the removal of approximately seven acres of sagebrush shrublands is not anticipated to have a measureable influence on local bird populations as there is considerable suitable habitat adjacent to the project area. Prompt and effective reclamation would promote a healthier, diverse plant community which may potentially benefit local wildlife populations as a whole.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: There would be no direct or indirect impacts to migratory bird species or important habitats under the No Action Alternative.

Cumulative Effects: There would be no contribution to previous or existing disturbances under the No Action Alternative.

Mitigation:

1. Vegetation removal associated with well pad and access road development will take place outside the migratory bird nesting season of May 15 through July 15. Earthwork associated with the Proposed Action will be permitted from July 16 through May 14.

2. The operator shall prevent use by migratory birds of reserve pits that store or are expected to store fluids which may pose a risk to migratory waterfowl, shorebirds, wading birds and raptors during completion and after completion activities have ceased. Methods may include netting or other alternative methods that effectively prevent use and that meet BLM approval. It will be the responsibility of the operator to notify the BLM of the method that will be used to prevent use two weeks prior to when completion activities are expected to begin. The BLM approved method will be applied within 24 hours after completion.

TERRESTRIAL WILDLIFE

Affected Environment: The lower elevation sagebrush and PJ communities that encompass the project area are categorized by Colorado Parks and Wildlife as big game winter concentration/severe winter range. These ranges typically receive heaviest use from January through April.

Involvement of mature PJ woodlands is extremely limited in the project area. Rock outcrops located near the junction of Hwy 64 and BLM road 1103 may provide suitable nest substrate for golden eagle and red-tailed hawk.

The distribution and abundance of small mammal populations are poorly documented within the Resource Area. Recent trapping efforts undertaken throughout Piceance Basin indicate a high tendency in both sagebrush and PJ communities for more generalized species such as deer mouse and least chipmunk and it is suspected that these species would be relatively abundant in the project area. There are no small mammal species that are narrowly endemic or highly specialized species known to inhabit the project area.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The Proposed Action would remove approximately 17 acres of predominantly Wyoming big sagebrush habitat which provide forage resources for big game particularly during the winter months. Under natural succession regimes these sagebrush communities would take anywhere from 20 – 30 years to return to preconstruction conditions. As stated in Migratory Bird section, nearly nine acres is associated with expansion of an existing road. It is unlikely that these sagebrush and pinyon-juniper communities adjacent to the existing road receive heavy use by local wildlife populations. Pad development during the winter months would have greater potential to displace big game as both deer and elk tend to congregate in the

surrounding lower elevation PJ and sagebrush habitats during these time frames. Increased vehicle traffic, noise and human activity, particularly during the construction and drilling phase, would have the greatest potential to displace local wildlife (contributing to increased energetic demands); however due to the limited amount of activity in the immediate vicinity, it is suspected that local big game populations would have adequate forage and cover resources available. The proposed locations and the entire access road are located in mule deer severe winter range and as such would be subject to RMP timing limitations designed to limit disturbance during the core period of occupation (January 1 – April 30). Local wildlife would be expected to return to the area once drilling has ceased.

Very limited woodland habitat suitable for raptor nesting is present in and around the project area. Raptor surveys were conducted in late-April, 2011. Approximately 29 acres, including cliff habitat, were surveyed within the vicinity of the project area. One active American kestrel nest was observed approximately 260 ft south of the existing access road.

Cumulative Effects: The Proposed Action in and of itself is not anticipated to contribute substantially to existing or proposed disturbances, nor is expected to have any measureable influence on local wildlife populations. Development of these two locations would represent an incremental reduction in mule deer severe winter range.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: There would be no direct or indirect impacts to terrestrial wildlife species under the No Action Alternative.

Cumulative Effects: There would be no contribution to previous or existing disturbances that would potentially impact terrestrial wildlife species or habitats under the No Action Alternative.

Mitigation:

1. No activities will be allowed within mule deer severe winter range from January 1 through April 30 to reduce adverse behavioral effects on wintering big game (WRRA ROD TL-08).

2. Should construction activities coincide with the 2012 raptor breeding season (April 1 – July 15), a spot check of known nest locations will be necessary prior to construction initiation. Should a nest be determined active, appropriate timing stipulations will be applied (WRRA ROD TL-04). No surface occupancy will be allowed within 1/8 mile of identified nests.

Finding on the Public Land Health Standard #3 for Plant and Animal Communities: The Land Health Standards for animal communities are currently being met in the project area. Neither the Proposed nor No Action Alternatives are expected to detract from the continued meeting of the Land Health Standards.

WILD HORSES

Affected Environment: Wild horses on public lands are protected under the Wild and Free Roaming Horse and Burro Act of 1971 and are managed by the BLM. The wild horses are managed by BLM to provide a healthy, viable breeding population with a diverse age structure. BLM's Piceance-East Douglas Herd Management Area (HMA) consists of approximately 190,130 acres. The current configuration of the HMA provides for high summer range on the Cathedral Bluffs, surrounded by adjacent fall-winter-spring ranges in both the Piceance and Douglas Creek Basins.

The HMA is especially valuable because of the habitat diversity it contains. Vegetation consists of PJ woodlands interspersed with sagebrush and greasewood. Wild horses rely on these woodlands during the summer months for shade and protection of newborn foals from predation and during the winter months for cover during severe winter storms. Over 90 percent of wild horse diet is comprised of grasses with shrubs becoming more important during periods of heavy snowfall when horses can less readily paw through snow cover to the grass below. Water intake is supplied by springs, man-made water developments, stock ponds, and perennial streams.

The population of the herd, prior to the spring 2010 foal crop, was estimated at 265 individuals. The management range is between 135 and 235 animals. The WRFO completed a wild horse gather in September 2011 therefore WRFO would not expect to gather wild horses again until approximately 2015. The herd's annual production rate is on the order of 20 percent. The wild horse population is controlled through gather operations approximately every fourth year. Wild horse viewing is a popular form of non-consumptive recreation.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The Proposed Action is located in the HMA in the area known as Rocky Ridge and more specifically the northern face. Construction and operation of the proposed project would result in the disturbance of approximately 17 acres of land area within the HMA. The primary impact would be removal of existing vegetation and loss of forage and cover. The loss of 17 acres within would be minimal in regards to the 190,130 acres HMA. Wild horses could be disrupted by noise and fugitive dust associated with the proposed activities, particularly during foaling season although it is usually witnessed that the wild horses make efforts to avoid such areas when there is additional human presence. Generally, impacts to forage would be expected to be long term until complete reclamation of the site is achieved. Temporary impacts would be limited to the period during construction as well as intermittent impacts from fugitive dust occurring when road ways would be in use after construction.

In general, this area has previously been identified by both the WRFO and the Rio Blanco County Sheriff's department as an area that needs consideration for the repair and maintenance of current fences. WRFO has talked to the Colorado Department of Transportation (CDOT) regarding the condition of the current fences in the area as well as the process for fencing those sections of Hwy 64 further west; however, these issues remain unresolved, primarily due to budget constraints. Those sections of the Hwy 64 corridor that had no previous fence and are currently listed as open range may need to be changed due to that fact that several bands of wild

horses are regularly reported either on the highway itself or in nearby barrow ditches, with a greater number of those sightings during the night time hours when vehicle visibility and the narrowness of the highway may cause additional occurrences of hitting wild horses on the highway. Because this project includes the upgrading of a current road that leads from the well pad to Hwy 64, the WRFO believes that these occurrences may become more frequent, therefore the risks would be greater to both the wild horses that utilize this portion of the HMA, as well as, the general public utilizing Hwy 64. WRFO would recommend that CDOT, Vecta Oil & Gas, LTD., Whiting Oil and Gas Corporation (which is the operator to the east within the Rocky Ridge portion of the HMA), and the WRFO join forces and resolve these issue(s).

Cumulative Effects: Energy development in the HMA includes old well development, newer multi-well pads, and natural gas processing and transportation (i.e., pipelines). Energy development is likely to continue to occur and include disturbances associated with those activities. Livestock, wild horse and wildlife grazing occurs and will continue to occur on the public and private lands in the area, however, there may be a period of time that all of the animals avoid these two locations until little or no human activity is taking place and when the success of vegetation re-establishment is performed.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: The Proposed Action would not occur therefore no direct or indirect effects would result.

Cumulative Effects: No cumulative impacts have been identified.

Mitigation:

1. The operator shall be required to install and maintain a horse proof cattleguard where the access road to 1-13-2-98 and 3-18-2-97 connects to State Highway 64. This cattleguard will be installed at the time of the road upgrades; or as soon as the fence repairs/maintenance has been performed by CDOT (or other) along State Highway 64.

2. It is necessary for the company to make pre-construction contact with the WRFO in order to determine if any of the following mitigation is warranted: In order to protect wild horses within this area, development activities may be delayed for a period in excess of 60 days during the spring foaling period between March 1 and June 15. The lessee may also be required to perform special conservation measures within this area including: 1) Habitat improvement projects in adjacent areas if development displaces wild horses from critical habitat, 2) disturbed watering areas would be replaced with an equal source of water having equal utility, and 3) activity/ improvements would provide for unrestricted movement of wild horses between summer and winter ranges.

PALEONTOLOGICAL RESOURCES

Affected Environment: Proposed 1-13-2-98: The proposed well pad and access route are located in an area generally mapped as the Douglas Creek unit of the Green River Formation. The BLM, WRFO has classified the Douglas Creek unit as a Potential Fossil Yield Classification

(PFYC) 4 formation as it is known to produce vertebrate fossils and possibly other fossils of scientific importance.

Proposed 3-18-2-97well pad: The proposed well pad and a portion of the access road are located in an area generally mapped as the Lower Green River/Wasatch formation (Tweto 1979). The Wasatch formation has been classified by the BLM, WRFO as a PFYC 5 formation meaning it is known for producing scientifically noteworthy fossil resources (c.f. Armstrong and Wolny 1989). The lower Green River is also known to produce numerous scientifically noteworthy fossil resources and is classified as a PFYC 4 or 5 depending on the exact strata in the formation.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: Proposed 1-13-2-98 location: If it becomes necessary to excavate into the underlying sedimentary rock formation to construct the access, level the well pad, or excavate the reserve/blooie/cuttings pit, there is a potential to directly impact scientifically noteworthy fossil resources. Any increased erosion or increased public access into the area due to the new access could result in additional loss of resources, particularly smaller fossils that are more fragile or easily removed. The Wasatch is particularly known for the presence of small mammals which are particularly fragile due to the delicate nature of the skeletal elements (c.f. Armstrong and Wolny 1989).

Proposed 3-18-2-97: If it becomes necessary to excavate into the underlying sedimentary rock formation to construct the access, level the well pad, or excavate the reserve/blooie/cuttings pit, there is a potential to directly impact scientifically noteworthy fossil resources. Some vertebrate fossils are known along with insects and snails (c.f. Armstrong and Wolny 1989), all of which tend to be fairly small and fragile. Any increased erosion or increased human activity in the area could cause accelerated loss of these smaller fossils.

Cumulative Effects: For both proposed well pad locations there is a somewhat high potential for irreversible and irretrievable loss of paleontological and paleo-environmental data to the regional paleontological database as a result of direct impacts due to construction, indirect impacts from increased human activity in the area, and a potential increase in erosion in the newly disturbed areas.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: Under the No Action alternative the wells would not be approved and there would be no new construction-related disturbance to the fossil bearing formations. There would be no large scale loss of scientific data to the regional paleontological database.

Cumulative Effects: The normal weathering process, not overly influenced by human activity, would continue as would an extremely slow erosion of the formations with the equally slow exposure and weathering of any exposed fossils. This is irreversibly and irretrievable but not particularly significant to the database.

Mitigation:

1. Vecta is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for disturbing or collecting vertebrate fossils, collecting large amounts of petrified wood (over 25lbs./day, up to 250lbs./year), or collecting fossils for commercial purposes on public lands.

2. If any paleontological resources are discovered as a result of operations under this authorization, Vecta or any of his agents must stop work immediately at that site, immediately contact the BLM Paleontology Coordinator, and make every effort to protect the site from further impacts, including looting, erosion, or other human or natural damage. Work may not resume at that location until approved by the AO. The BLM or designated paleontologist will evaluate the discovery and take action to protect or remove the resource within 10 working days. Within 10 days, the operator will be allowed to continue construction through the site, or will be given the choice of either (a) following the Paleontology Coordinator's instructions for stabilizing the fossil resource in place and avoiding further disturbance to the fossil resource, or (b) following the Paleontology Coordinator's instructions for mitigating impacts to the fossil resource prior to continuing construction through the project area.

3. Any excavations into the underlying native sedimentary stone must be monitored by a permitted paleontologist. The monitoring paleontologist must be present before the start of excavations that may impact bedrock.

HAZARDOUS OR SOLID WASTES

Affected Environment: There are no known hazardous or other solid wastes on the subject lands. No hazardous materials are known to have been used, stored, or disposed of at sites included in the project area.

Environmental Consequences of the Proposed Action: Environmental Consequences of the Proposed Action: The proposed activities may use regulated materials and will generate some solid and sanitary wastes. The potential for harm to human health or the environment is presented by the risks associated with spills of fuel, oil and/or hazardous substances used during oil and gas operations. Other accidents and mechanical breakdowns of machinery are also possible.

Substances used in the hydraulic fracturing process may be harmful to human health or the environment. However, freshwater-bearing formations and other resources suitable for human use or consumption are isolated from man-made materials used in oil and gas operations through the use and cementing of surface casing, see 43 CFR §3162.5-2(d).

Environmental Consequences of the No Action Alternative: No hazardous or other solid wastes would be generated under the no-action alternative.

Mitigation:

1. As a reasonable and prudent, Vecta, acting in good faith, will report all emissions or releases that may pose a risk of harm to human health or the environment, regardless of a substance's status as exempt or nonexempt and regardless of fault, to the BLM WRFO (970) 878-3800.

2. As a reasonable and prudent, Vecta, acting in good faith, will provide for the immediate clean-up and testing of air, water (surface and/or ground), and soils contaminated by the emission or release of any substance that may pose a risk of harm to human health or the environment, regardless of that substance's status as exempt or non-exempt. Where Vecta fails, refuses, or neglects to provide for the immediate clean-up and testing of air, water (surface and/or ground), and soils contaminated by the emission or release of any quantity of a substance that poses a risk of harm to human health or the environment, the BLM WRFO may take measures to clean-up and test air, water (surface and/or ground), and soils at Vecta's expense plus an additional 25 percent as per 43 CFR 3163.1 (a)(4). Such action will not relieve Vecta of any liability or responsibility.

3. Where required by law or regulation to develop a plan for the prevention of releases or the recovery of a release of any substance that poses a risk of harm to human health or the environment, provide a current copy of said plan to the BLM WRFO.

4. With the acceptance of this authorization, the commencement of operations under this authorization, or within thirty calendar days from the issuance of this authorization, whichever occurs first, Vecta and, through the Vecta's agents, employees, subcontractors, successors and assigns, stipulates and agrees to indemnify, defend and hold harmless the United States Government, its agencies, and employees from all liability associated with the emission or release of substances that pose a risk of harm to human health or the environment.

5. All substances that pose a risk of harm to human health or the environment shall be stored in appropriate containers. Fluids that pose a risk of harm to human health or the environment, including but not limited to produced water, oil, or methanol, shall be stored in appropriate containers and in secondary containment systems sized at least 110 percent of the largest vessel's capacity. Secondary fluid containment systems, including but not limited to tank batteries shall be lined with a minimum 24 mil impermeable liner.

6. Construction sites and all facilities shall be maintained in a sanitary condition at all times; waste materials shall be disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.

7. Vecta shall comply with all Federal, State and/or local laws, rules, and regulations, including but not limited to Onshore Orders and Notices to Lessees, addressing the emission of and/or the handling, use, and release of any substance that poses a risk of harm to human health or the environment.

8. Through all phases of oil and gas exploration, development, and production, Vecta shall employ, maintain, and periodically update to the best available technology(s) aimed at reducing: 1) emissions, 2) fresh water use, and 3) utilization, production, and release of any substance that poses a risk of harm to human health or the environment.

RANGELAND MANAGEMENT

Affected Environment: The proposed well pads and access routes are located within the Rocky Ridge pasture of the Yellow Creek grazing allotment (06030). Authorized livestock use within this allotment is shown in the Table 10 below.

Table 10. Authorized Livestock Use within the Yellow Creek Grazing Allotment

Authorized use Within the Rocky Ridge Pasture					
Livestock		Grazing Period		Percent Public Land	Authorized Use (AUMs)
Number	Kind	Begin	End		
100	Cattle	4/15	5/15	100	102
120	Cattle	1/1	1/31	100	122

Environmental Consequences of the Proposed Action:
Direct and Indirect Effects: The proposed action would result in a short-term loss of less than 2 AUM of livestock forage. This initial loss of forage would be considered short term, if revegetation is prompt and effective there would be no net loss of livestock forage over the long term. Following successful revegetation of disturbance associated with well pad, and road construction, it is expected that forage available to livestock will increase slightly due to conversion of the disturbed area from a shrub dominated site to a grass/forb site which potentially have higher forage production value for grazing animals. As proposed, no range improvement projects would be affected by implementation of the project.

Cumulative Effects: Implementation of the proposed action in conjunction with existing and future uses is not expected to impede or affect the proper management of livestock on rangelands within the grazing allotment in which the proposed action occurs.

Environmental Consequences of the No Action Alternative:
Direct and Indirect Effects: There would be no change from the present situation.

Cumulative Effects: There would be no vegetation disturbing activities which would contribute to short term reduction of forage within the project area. There would be no potential for damage to range improvement projects as a result of the proposed project.

Mitigation: Any range improvement projects such as fences, water developments, or other livestock handling/distribution facilities that are damaged or destroyed as a direct or indirect result of implementation of the proposed action shall be promptly repaired or replaced by the applicant to restore pre-disturbance functionality.

REALTY AUTHORIZATIONS

Affected Environment: The access road crosses public lands and is off-lease; therefore, a right-of-way (ROW) is required. Power line ROWs are authorized to White River Electric Association and Tri-State Generation & Transmission, a natural gas pipeline ROW is authorized to Northwest Pipeline, and a telephone cable ROW is authorized to Qwest.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The access road ROW would be 6,280 ft long, 35 ft wide, and contain approximately 5.05 acres. The access road on BLM lands is an existing road that Vecta proposes to maintain in as good or better conditions than at present. A regular maintenance plan will include, but not be limited to blading, ditching, and surfacing. Damage to existing ROWs could occur if maintenance activities are not properly planned and other ROW facilities are not properly identified prior to any activity.

Cumulative Effects: The access road is an existing road across BLM lands so no new disturbance would be created by the Proposed Action.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: Failure to authorize the proposed project would not result in any increased impacts to realty authorizations in the area.

Cumulative Effects: There would not be any cumulative effects from not authorizing the proposed off-lease access road.

Mitigation:

1. All activities shall comply with all applicable local, state, and federal laws, statutes, regulations, standards, and implementation plans. This includes acquiring all required federal, state, and/or local permits, effectively coordinating with existing ROW holders, and implementing all applicable mitigation measures required by each permit.

2. At least 90 days prior to termination of the right-of-way, the holder shall contact the AO to arrange a joint inspection of the right-of-way. This inspection will be held to agree to an acceptable termination and rehabilitation plan. This plan shall include, but is not limited to, removal of facilities, drainage structures, and surface material (e.g., gravel or concrete), as well as final recontouring, spreading of topsoil, and seeding. The AO must approve the plan in writing prior to the holder's commencement of any termination activities.

ACCESS AND TRANSPORTATION

Affected Environment: Access to the project area will occur primarily along BLM Road 1103 and small sections of other un-numbered BLM roads and two-track routes. Primary access to these routes will be from Colorado State Highway 64. SH 64 is a paved roadway and the BLM roads are natural surfaced.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: An incremental increase in traffic is expected during well construction and road upgrades. The majority of the traffic that could impact the public would be along SH 64 and BLM 1103. Trucks turning onto SH 64 will be of concern to other drivers. Other roads used for access are primarily dirt surfaced with lesser amounts of traffic. It is expected that the dirt roads would experience some form of degradation due to the increase in heavy truck traffic and heavy equipment traffic; however, the proposed upgrades to BLM Road 1103 to accommodate the heavy traffic would help mitigate this. Frequent use in dry conditions may result in an increase in fugitive dust and may impact some privately owned property or reduce visibility along the roadway when encountering oncoming traffic.

Cumulative Effects: The increase in traffic from this project, combined with the expected increase in traffic associated with other ongoing oil and gas development in the area can be expected to cumulatively contribute to an overall increase in traffic and its associated effects.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: Since the project would not be completed, there would be no associated impacts on access and transportation.

Cumulative Effects: None.

Mitigation: None

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1979 Geologic Map of Colorado. United States Geologic Survey, Department of the Interior, Reston, Virginia.

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1985 Preliminary Assessment of the Ground-Water Resources of the Alluvial Aquifer, White River Valley, Rio Blanco, Colorado. Water-Resource Investigation Report 84-4307. United States Geologic Survey, Department of the Interior, Reston, Virginia.

INTERDISCIPLINARY REVIEW:

Table 11. Interdisciplinary Review and Areas of Responsibility

Name	Title	Area of Responsibility	Date Signed
Bob Lange	Hydrologist	Air Quality; Surface and Ground Water Quality; Floodplains, Hydrology, and Water Rights; Soils	01/06/12
Zoe Miller	Ecologist	Areas of Critical Environmental Concern; Special Status Plant Species; Forest Management	1/09/12
Michael Selle	Archaeologist	Cultural Resources; Native American Religious Concerns; Paleontological Resources	12/7/2011
Tyrell Turner	Rangeland Management Specialist	Invasive, Non-Native Species; Vegetation; Rangeland Management	12/19/2011
Lisa Belmonte	Wildlife Biologist	Migratory Birds; Special Status Animal Species; Terrestrial and Aquatic Wildlife; Wetlands and Riparian Zones	12/29/2011
Christina Barlow	Natural Resource Specialist	Hazardous or Solid Wastes	1/3/2011
Chad Schneckenburger	Outdoor Recreation Planner	Wilderness; Visual Resources; Access and Transportation; Recreation,	12/21/2011
Will Hutto	Fuels Specialist	Fire Management	10/11/2011
Paul Daggett	Mining Engineer	Geology and Minerals	12/09/2011
Stacey Burke	Realty Specialist	Realty	09/14/2011
Melissa J. Kindall	Range Technician	Wild Horse Management	11/30/2011
Christina Barlow	Natural Resource Specialist	Project Lead – Document Preparer	12/10/2011

ATTACHMENTS:

Figure 1: Project Map 1-13-2-98 well
Figure 2: Project Map 3-18-2-97 well

Figure 1. Project Map 1-13-2-98 well

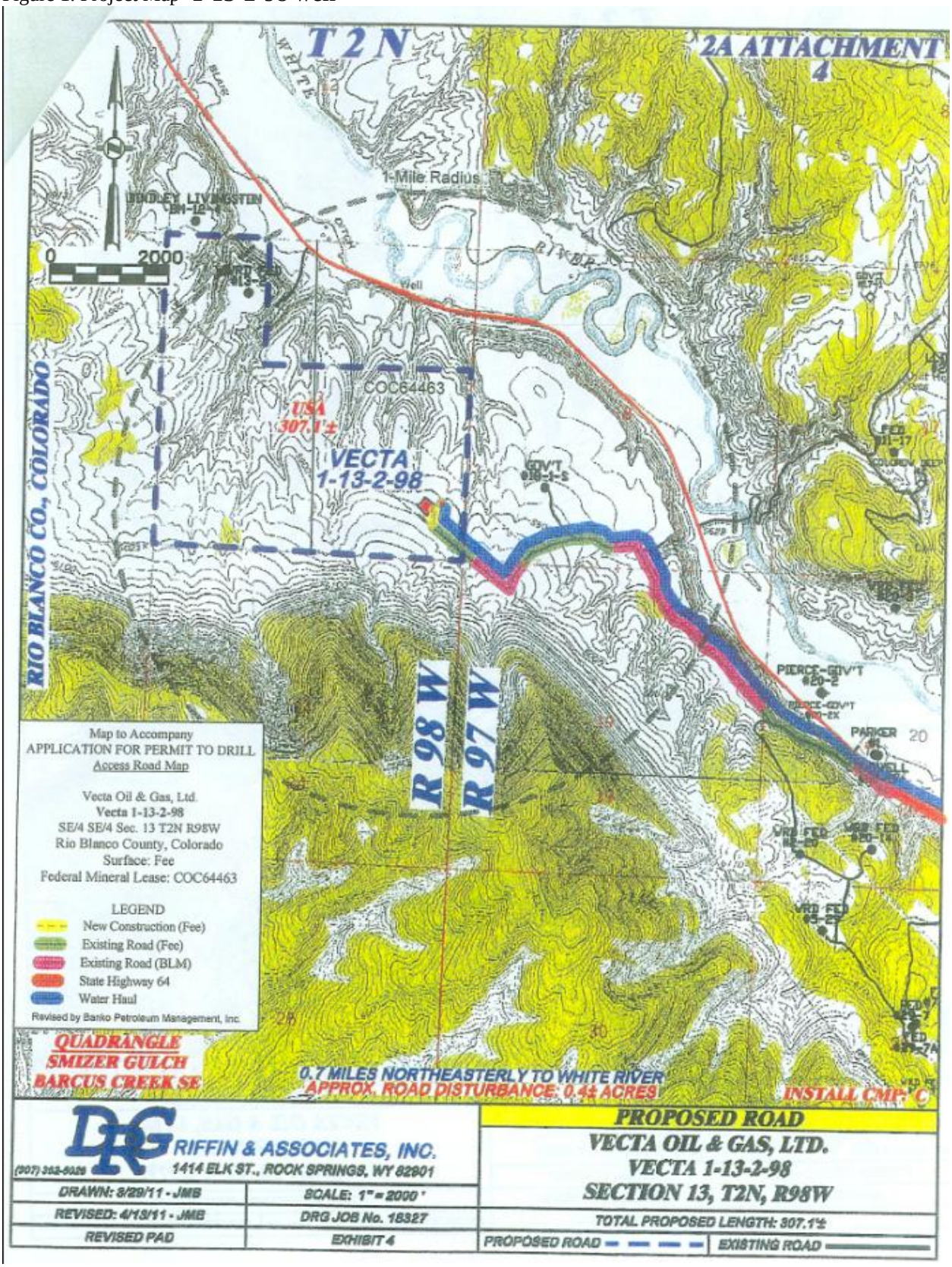
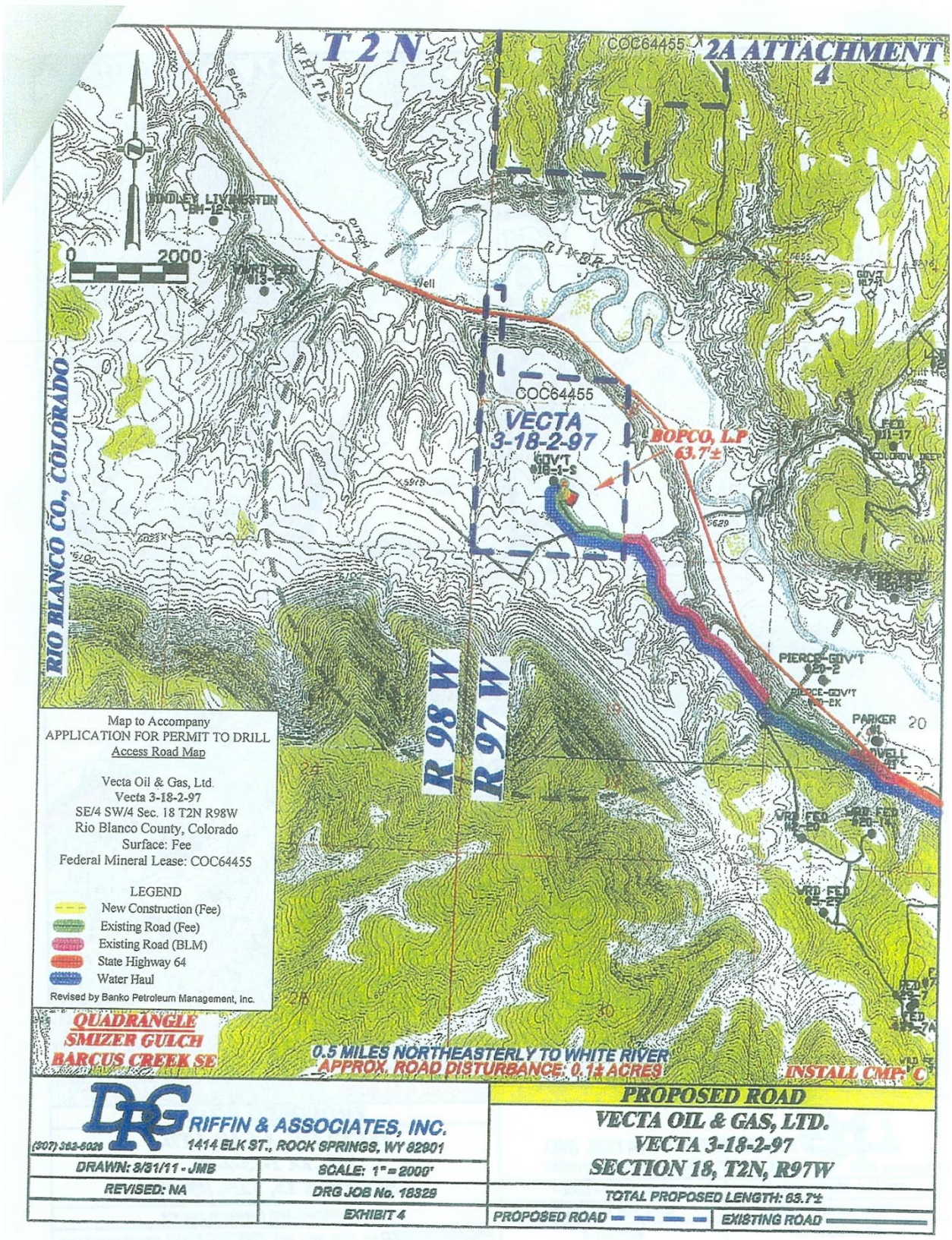


Figure 1. Project Map



U.S. Department of the Interior
Bureau of Land Management
White River Field Office
220 E Market St
Meeker, CO 81641

Finding of No Significant Impact (FONSI)

DOI-BLM-CO-110-2011-0140-EA

BACKGROUND

Vecta proposes to construct, drill, operate, and maintain two oil and/or natural gas wells on federal lease numbers COC-64469 and COC-64455. The wells are exploratory in these lease areas. The proposed wells would be located on private lands owned by Bass Enterprises; a surface use agreement has been arranged between the land owner and applicant. Access over BLM-administered roads on federal lease COC-75126 would be granted through a Right of Way. The holder of the ROW would be required to maintain portions of the road used to access the well sites consistent with BLM Road Manual 9113 standards.

FINDING OF NO SIGNFICANT IMPACT

Based on the analysis of potential environmental impacts contained in the attached environmental assessment, and considering the significance criteria in 40 CFR 1508.27, I have determined that the Proposed Action will not have a significant effect on the human environment. An environmental impact statement is therefore not required.

Context

The project is a site-specific action directly involving BLM administered public lands that do not in and of itself have international, national, regional, or state-wide importance. Significant direct, indirect, or cumulative impacts were not identified as likely to occur as result of implementing the Proposed, past, present, and reasonably foreseeable future Actions. The BLM interdisciplinary team evaluated all known natural resource values present within the Natural Resources Conservation Service (NRCS) 5th Level Watershed and developed site-specific mitigation measures to minimize localized, temporary impacts.

Intensity

The following discussion is organized around the 10 Significance Criteria described at 40 CFR 1508.27. The following have been considered in evaluating intensity for this Proposed Action:

1. Impacts that may be both beneficial and adverse.

The impacts described in the 2011-0140-EA are all considered temporary and of low-intensity, provided the design features proposed in the Surface Use Plan of Operations (SUPO) and the proposed mitigation are implemented. Any adverse impacts would be of short duration, and are primarily associated with the direct removal of vegetation to construct the well pad; this impact would be mitigated by prompt interim reclamation following construction. Implementation of the Proposed Action design features and mitigation measures for reclamation may enhance the

plant community structure and function. The depletion of the hydrocarbon resource would be considered a beneficial impact as the product will contribute to local and national energy supply.

2. The degree to which the Proposed Action affects public health or safety.
There would be no impact to public health and safety if the proposed mitigation for solid and hazardous waste management is properly implemented and the development occurs consistent with the proposed design features described in the Drilling and SUPO.

3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.
No parks, prime farmlands, wild and scenic rivers, or other areas of special environmental concern have been identified within the project area. The proposed well locations and access routes have been inventoried at the Class III (100 percent) pedestrian level with no surface manifestations of cultural resources identified (Davenport 2001 compliance dated 4/21/2011).

4. Degree to which the possible effects on the quality of the human environment are likely to be highly controversial.
The wells would be drilled on established leases (COC-64463 and COC-64455), and the operation of existing wells in these lease areas have not been subjects of public controversy. Furthermore, the federal action of issuing a permit to drill for oil and gas resources has been routinely analyzed in site-specific Environmental Assessments (EAs) as well as in the White River Resource Management Plan.

5. Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risk.
No highly uncertain or unknown risks to the human environment were identified during analysis of the Proposed Action. Risk of harm to human health or the environment would be substantially reduced if the recommended mitigation for solid and hazardous waste management is properly implemented and/or adhered to.

6. Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.
The Proposed Action neither establishes a precedent for future BLM actions with significant effects nor represents a decision in principle about a future consideration. The federal action of issuing a permit to drill for oil and gas resources has been routinely analyzed in site-specific EAs as well as in the White River Resource Management.

7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.
The reclamation plan in the operator's SUPO reduces the cumulative significance of vegetative loss and soil disturbance by proposing prompt interim reclamation and stormwater control.

8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

The proposed well locations and access routes have been inventoried at the Class III (100 percent) pedestrian level with no cultural resource surface manifestations identified (Davenport 2001 compliance dated 4/21/2011).

9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act (ESA) of 1973.

There are no threatened or endangered animal species that are known to inhabit or derive important use from the project area. The Wyoming big sagebrush habitats that encompass the project area provide habitat for Brewer's sparrow, a BLM sensitive species and one listed by the U.S. Fish and Wildlife Service (FWS) as a Bird of Conservation Concern. Mitigation has been provided to protect the Brewer's sparrow and other migratory birds. There are no special status plant species concerns associated with the Proposed Action.

10. Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

Neither the Proposed Action nor impacts associated with it violate any laws or requirements. The operator certified in their SUPO that they are aware of all existing local, state, and federal rules and regulations related to the proposed oil and gas development, and takes full responsibility of its actions and those of its contractors or subsidiaries.

SIGNATURE OF AUTHORIZED OFFICIAL: _____ Field Manager

DATE SIGNED: 01/31/2012

U.S. Department of the Interior
Bureau of Land Management
White River Field Office
220 E Market St
Meeker, CO 81641

DECISION RECORD

PROJECT NAME: Two Vecta-White River Dome Wildcat Wells

ENVIRONMENTAL ASSESSMENT NUMBER: DOI-BLM-CO-2011-0140-EA

DECISION

It is my decision to implement the Proposed Action (Alternative A), as mitigated in DOI-BLM-CO-2011-0140-EA, authorizing the construction, operation, and maintenance of the proposed two exploratory wells and their access routes.

Air Quality

1. Vecta Oil and Gas will limit unnecessary emissions from point or nonpoint pollution sources and prevent air quality deterioration from necessary pollution sources in accordance with all applicable state, federal and local air quality law and regulation.
2. Vecta Oil and Gas will treat all access roads with water and/or a chemical dust suppressant during construction and drilling activities so that there is not a visible dust trail behind vehicles. Any technique other than the use of freshwater as a dust suppressant on BLM lands will require prior written approval from BLM.

Soil Resources

3. Due to the nature of the soil conditions on BLM Road 1103 the entire travel way for the access roads to each pad will be surfaced with 3 inch minus material as described in the SUPO. This surface material should be composed of road base and/or gravel to a compacted depth of six inches before equipment used for drilling or supporting drilling operations moves on to the project site. The travel surface of the roads shall be maintained on all roads during construction, drilling, completion and production phases such that the gravel functions as an effective as an all-weather surface.
4. In order to protect rangeland health standards for soils, erosion features such as rilling, gullying, piping and mass wasting on the surface disturbance or adjacent to the surface disturbance as a result of this action will be addressed immediately after observation by contacting the Authorized Officer (AO) and by submitting a plan to assure successful soil stabilization with BMPs to address erosion problems.
5. All construction activity shall cease when soils or road surfaces become saturated to a depth of three inches unless approved by the AO.

Ground and Surface Waters

6. To protect surface waters below the project area, keep road inlet and outlet ditches, sediment retention basins, and culverts free of obstructions, particularly before and during spring run-off and summer convective storms. Provide adequate drainage spacing to avoid accumulation of water in ditches or road surfaces. Install culverts with adequate armoring of inlet and outlet. Patrol areas susceptible to road or watershed damage during periods of high runoff.
7. Locate culverts or drainage dips in such a manner as to avoid discharge onto unstable terrain such as headwalls or slumps. Provide adequate spacing to avoid accumulation of water in ditches or road surfaces. Install culverts with adequate armoring of inlet and outlet. Patrol areas susceptible to road or watershed damage during periods of high runoff.
8. When drilling to set the surface casing, drilling fluid will be composed only of fresh water, bentonite, and/or a benign lost circulation material that does not pose a risk of harm to human health or the environment (e.g., cedar bark, shredded cane stalks, mineral fiber and hair, mica flakes, ground and sized limestone or marble, wood, nut hulls, corncobs, or cotton hulls).
9. Vecta shall line the reserve pit with a minimum of 24 mil liner to protect shallow groundwater and the White River aquifer. If groundwater is encountered during pit construction activity, pit construction shall cease and the location shall be reclaimed. An alternate location or an alternate plan (e.g., disposing of pit contents offsite or use of a closed loop and/or semi-closed loop system) must be approved by the AO before resuming operations.
10. Vecta shall monitor pits monthly when containing liquid to identify potential leaks. Pits shall be constructed, monitored, and operated to provide for a minimum of two ft of freeboard at all times and maintain fluids in pits. If the operator believes one of the pits has leaked the AO should be notified immediately and all liquids should be removed and properly disposed of off-site. Vecta will remove all oil from of reserve pits within 24 hours and dispose of it in a proper disposal facility.
11. Vecta shall close the reserve pit within 15 months after the well is drilled. The reserve pits will be allowed to dry through natural evaporation for one four season cycle after the well is drilled. If a pit has not dried by the end of this period, all remaining fluids and/or mud must be removed and disposed of in an approved manner. The concentration of hazardous substances in the reserve pit at the time of pit backfilling must not exceed the standards set forth in CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act of 1980).

Vegetation

12. In addition to the design features submitted by the applicant in the SUPO, the applicant shall use seed that is certified and free of noxious weeds. BLM recommends using seed mix #2 listed below (Table 9), rather than seed mix #3 as proposed in the SUPO.

BLM-Recommended Seed Mix

SEED MIX #2			
Cultivar	Species	Scientific Name	Application Rate (lbs PLS/acre)
Arriba	Western Wheatgrass	*Pascopyrum smithii*	4
Rimrock	Indian Ricegrass	*Achnatherum hymenoides*	3.5
Whitmar	Bluebunch Wheatgrass	*Pseudoroegneria spicata ssp. inermis*	4
Lodorm	Green Needlegrass	*Nassella viridula*	2.5
Timp	Northern Sweetvetch	*Hedysarum boreale*	3
	Sulphur Flower	*Eriogonum umbellatum*	1.5
Alternates:*			
Critana	Needle and Thread	*Elymus lanceolatus ssp. lanceolatus*	3
	Scarlet Globemallow	*Sphaeralcea coccinea*	0.5

Wildlife

13. Vegetation removal associated with well pad and access road development will take place outside the migratory bird nesting season of May 15 through July 15.
14. The operator shall prevent use by migratory birds of reserve pits that store or are expected to store fluids which may pose a risk to migratory waterfowl, shorebirds, wading birds and raptors during completion and after completion activities have ceased. Methods may include netting or other alternative methods that effectively prevent use and that meet BLM approval. It will be the responsibility of the operator to notify the BLM of the method that will be used to prevent use two weeks prior to when completion activities are expected to begin. The BLM approved method will be applied within 24 hours after completion.
15. No activities will be allowed within mule deer severe winter range from January 1 through April 30 to reduce adverse behavioral effects on wintering big game (WRRA ROD TL-08).
16. Should construction activities coincide with the 2012 raptor breeding season (April 1 – July 15), a spot check of known nest locations will be necessary prior to construction initiation. Should a nest be determined active, appropriate timing stipulations will be applied (WRRA ROD TL-04). No surface occupancy will be allowed within 1/8 mile of identified nests

Wild Horses

17. The operator shall be required to install and maintain a horse proof cattleguard where the access road to 1-13-2-98 and 3-18-2-97 connects to State Highway 64. This cattleguard will be installed at the time of the road upgrades; or as soon as the fence repairs/maintenance has been performed by CDOT (or other) along State Highway 64.

18. It is necessary for the company to make pre-construction contact with the WRFO in order to determine if any of the following mitigation is warranted: In order to protect wild horses within this area, development activities may be delayed for a period in excess of 60 days during the spring foaling period between March 1 and June 15. The lessee may also be required to perform special conservation measures within this area including: 1) habitat improvement projects in adjacent areas if development displaces wild horses from critical habitat, 2) disturbed watering areas would be replaced with an equal source of water having equal utility, and 3) activity/ improvements would provide for unrestricted movement of wild horses between summer and winter ranges.

Paleontological Resources

19. Vecta is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for disturbing or collecting vertebrate fossils, collecting large amounts of petrified wood (over 25lbs./day, up to 250lbs./year), or collecting fossils for commercial purposes on public lands.
20. If any paleontological resources are discovered as a result of operations under this authorization, Vecta or any of his agents must stop work immediately at that site, immediately contact the BLM Paleontology Coordinator, and make every effort to protect the site from further impacts, including looting, erosion, or other human or natural damage. Work may not resume at that location until approved by the AO. The BLM or designated paleontologist will evaluate the discovery and take action to protect or remove the resource within 10 working days. Within 10 days, the operator will be allowed to continue construction through the site, or will be given the choice of either (a) following the Paleontology Coordinator's instructions for stabilizing the fossil resource in place and avoiding further disturbance to the fossil resource, or (b) following the Paleontology Coordinator's instructions for mitigating impacts to the fossil resource prior to continuing construction through the project area.
21. Any excavations into the underlying native sedimentary stone must be monitored by a permitted paleontologist. The monitoring paleontologist must be present before the start of excavations that may impact bedrock.

Hazardous and Solid Wastes

22. As a reasonable and prudent operator/ROW holder, Vecta, acting in good faith, will report all emissions or releases that may pose a risk of harm to human health or the environment, regardless of a substance's status as exempt or nonexempt and regardless of fault, to the BLM WRFO (970) 878-3800.
23. As a reasonable and prudent operator/ROW holder, Vecta, acting in good faith, will provide for the immediate clean-up and testing of air, water (surface and/or ground), and soils contaminated by the emission or release of any substance that may pose a risk of harm to human health or the environment, regardless of that substance's status as exempt or non-exempt. Where Vecta fails, refuses, or neglects to provide for the immediate clean-up and testing of air, water (surface and/or ground), and soils contaminated by the emission or release of any quantity of a substance that poses a risk of harm to human health or the environment, the BLM WRFO may take measures to clean-up and test air, water (surface

and/or ground), and soils at Vecta's expense plus an additional 25 percent as per 43 CFR 3163.1 (a)(4). Such action will not relieve Vecta of any liability or responsibility.

24. Where required by law or regulation to develop a plan for the prevention of releases or the recovery of a release of any substance that poses a risk of harm to human health or the environment, provide a current copy of said plan to the BLM WRFO.
25. With the acceptance of this authorization, the commencement of operations under this authorization, or within thirty calendar days from the issuance of this authorization, whichever occurs first, Vecta and, through the Vecta's agents, employees, subcontractors, successors and assigns, stipulates and agrees to indemnify, defend and hold harmless the United States Government, its agencies, and employees from all liability associated with the emission or release of substances that pose a risk of harm to human health or the environment.
26. All substances that pose a risk of harm to human health or the environment shall be stored in appropriate containers. Fluids that pose a risk of harm to human health or the environment, including but not limited to produced water, oil, or methanol, shall be stored in appropriate containers and in secondary containment systems sized at least 110 percent of the largest vessel's capacity. Secondary fluid containment systems, including but not limited to tank batteries shall be lined with a minimum 24 mil impermeable liner.
27. Construction sites and all facilities shall be maintained in a sanitary condition at all times; waste materials shall be disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.
28. Vecta shall comply with all Federal, State and/or local laws, rules, and regulations, including but not limited to Onshore Orders and Notices to Lessees, addressing the emission of and/or the handling, use, and release of any substance that poses a risk of harm to human health or the environment.
29. Through all phases of oil and gas exploration, development, and production, Vecta shall employ, maintain, and periodically update to the best available technology(s) aimed at reducing: 1) emissions, 2) fresh water use, and 3) utilization, production, and release of any substance that poses a risk of harm to human health or the environment.

Rangeland Management

30. Any range improvement projects such as fences, water developments, or other livestock handling/distribution facilities that are damaged or destroyed as a direct or indirect result of implementation of the Proposed Action shall be promptly repaired or replaced by the applicant to restore pre-disturbance functionality.

Realty Authorizations

31. All activities shall comply with all applicable local, state, and federal laws, statutes, regulations, standards, and implementation plans. This includes acquiring all required federal, state, and/or local permits, effectively coordinating with existing ROW holders, and implementing all applicable mitigation measures required by each permit.
32. At least 90 days prior to termination of the right-of-way, the holder shall contact the Authorized Officer to arrange a joint inspection of the right-of-way. The inspection will result in the development of an acceptable termination and rehabilitation plan submitted by the holder. This plan shall include, but is not limited to, removal of facilities, drainage

structures, and surface material; re-contouring; top soiling; or seeding. The Authorized Officer must approve the plan in writing prior to the holder's commencement of any termination activities.

COMPLIANCE WITH LAWS & CONFORMANCE WITH THE LAND USE PLAN

This decision is in compliance with the Endangered Species Act and the National Historic Preservation Act. It is also in conformance with the 1997 White River Record of Decision/Approved Resource Management Plan.

ENVIRONMENTAL ANALYSIS AND FINDING OF NO SIGNIFICANT IMPACT

The Proposed Action was analyzed in DOI-BLM-CO-2011-0140-EA and it was found to have no significant impacts, thus an EIS is not required.

PUBLIC INVOLVEMENT

Scoping was the primary mechanism used by the BLM to initially identify issues. Internal scoping was initiated when the project was presented to the White River Field Office (WRFO) interdisciplinary team on 9/13/2011. External scoping was conducted by posting this project on the WRFO's on-line National Environmental Policy Act (NEPA) register on 9/12/2011.

RATIONALE

Analysis of the Proposed Action has concluded that there are no significant negative impacts and that it meets Colorado Standards for Public Land Health.

ADMINISTRATIVE REMEDIES

State Director Review

Under regulations addressed in 43 CFR 3165.3(b), any adversely affected party that contests a decision of the Authorized Officer may request an administrative review, before the State Director, either with or without oral presentation. Such request, including all supporting documentation, shall be filed in writing with the BLM Colorado State Office at 2850 Youngfield Street, Lakewood, Colorado 80215 within 20 business days of the date such decision was received or considered to have been received. Upon request and showing of good cause, an extension may be granted by the State Director. Such review shall include all factors or circumstances relevant to the particular case.

Appeal

Any party who is adversely affected by the decision of the State Director after State Director review, under 43 CFR 3165.3(b), of a decision may appeal that decision to the Interior Board of Land Appeals pursuant to the regulations set out in 43 CRF Part 4.

SIGNATURE OF AUTHORIZED OFFICIAL: Kent K. Walter
Field Manager

DATE SIGNED: 01/31/2012